School-Wide Positive Behavioral Interventions and Supports (SWPBIS)
Public Health & Prevention: School-based
Benefit-cost estimates updated December 2019. Literature review updated January 2018.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our Technical Documentation.

Program Description: The intervention in this meta-analysis is School-Wide Positive Behavioral Interventions and Supports (SWPBIS) (note: the Positive Action and Responsive Classroom programs are examined separately). SWPBIS is a school-wide preventative intervention that aims to increase prosocial norms for all students and staff within a school. Program features include 1) a team of six to ten school staff members responsible for leading implementation, 2) an external behavioral support coach for on-site consultation, 3) clearly defined behavioral expectations for students, 4) a staff-developed lesson plan used to teach students the school-wide behavioral expectations, 5) consistent rewards for positive behavior that are used by all school staff, 6) consistent consequences for disciplinary infractions, and 7) a formal data collection and analysis system for disciplinary data. Once implemented, the program continues throughout each school year.

Benefit-Cost Summary Statistics Per Participant

Benefits to:				
Taxpayers	$2,837		Benefit to cost ratio	$14.12
Participants	$2,921		Benefits minus costs	$8,544
Others	$2,897		Chance the program will produce	
Indirect	$540		benefits greater than the costs	74 %
Total benefits	$9,195			
Net program cost	($651)			
Benefits minus cost	$8,544			

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2018). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:[1]	Benefits to:				
	Participants	Taxpayers	Others[2]	Indirect[3]	Total
Crime	$0	$143	$345	$72	$560
Labor market earnings associated with test scores	$2,598	$1,106	$1,370	$0	$5,074
K-12 special education	$0	$443	$0	$221	$664
Health care associated with externalizing behavior symptoms	$324	$1,145	$1,181	$572	$3,222
Adjustment for deadweight cost of program	$0	$0	$0	($326)	($326)
Totals	$2,921	$2,837	$2,897	$540	$9,195

[1]In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

[2]"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

[3]"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$207	2013	Present value of net program costs (in 2018 dollars)	($651)
Comparison costs	$0	2013	Cost range (+ or -)	10 %

The effect in our meta-analysis reflects three years of program participation. Annual per-participant costs are based on a model for the total cost for implementation as described in Blonigen et al. (2008). Application of economic analysis to school-wide positive behavior support (SWPBS) programs. Journal of Positive Behavior Interventions, 10(1), 5-19. The cost estimate assumes district-wide implementation of a positive behavior program in ten schools. We calculated the value of staff time using average Washington State compensation costs (including benefits) as reported by the Office of the Superintendent of Public Instruction. To calculate a per-student annual cost, we used the average number of students per school in Washington's prototypical schools formula.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our Technical Documentation.

Detailed Annual Cost Estimates Per Participant
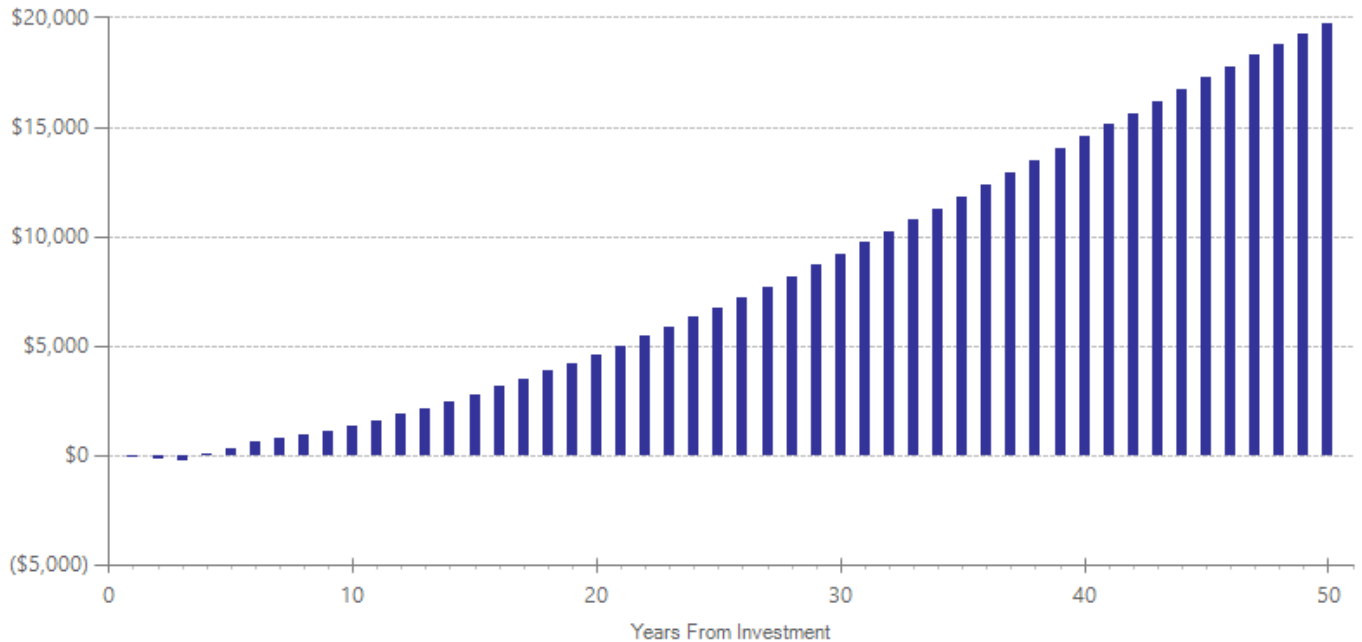
The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach $0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above $0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
| | | | | First time ES is estimated | | | Second time ES is estimated | | | | |
				ES	SE	Age	ES	SE	Age	ES	p-value
Externalizing behavior symptoms	10	1	7539	-0.740	0.343	13	-0.407	0.271	16	-0.740	0.031
Office discipline referrals^	10	1	7539	-0.252	0.092	13	n/a	n/a	n/a	-0.252	0.006
Suspensions/expulsions^	10	2	17445	-0.010	0.100	11	n/a	n/a	n/a	-0.010	0.924
Test scores	10	3	118261	0.036	0.054	12	0.028	0.059	17	0.036	0.507

^WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our Technical Documentation.

Citations Used in the Meta-Analysis

Bradshaw, C.P., Mitchell, M.M., & Leaf, P.J. (2010). Examining the effects of Schoolwide Positive Behavioral Interventions and Supports on student outcomes: Results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions, 12*(3), 133-148.

Bradshaw, C.P., Waasdorp, T.E., & Leaf, P.J. (2012). Effects of School-Wide Positive Behavioral Interventions and Supports on child behavior problems. *Pediatrics, 130*(5), 1136-45.

Gage, N.A., Sugai, G., Lewis, T.J., & Brzozowy, S. (2015). Academic achievement and School-Wide Positive Behavior Supports. *Journal of Disability Policy Studies, 25*(4), 199-209.

Sørlie, M.A., & Ogden, T. (2015). School-Wide Positive Behavior Support-Norway: Impacts on problem behavior and classroom climate. *International Journal of School & Educational Psychology, 3*(3), 202-217.

Ward, B., & Gersten, R. (2013). A randomized evaluation of the Safe and Civil Schools model for Positive Behavioral Interventions and Supports at elementary schools in a large urban school district. *School Psychology Review, 42*(3), 317-333.